The Michelson–Morley Null Result as a Consequence of a Frictionless Scalar Ether

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Abstract

This work shows that the Michelson–Morley null result does not contradict the existence of an ether. Within Quarkbase Cosmology, the ether is defined as a frictionless scalar-pressure medium that supports only isotropic Ψ-field oscillations. Such a medium produces no drag, no anisotropy, and no preferred-frame signatures detectable by interferometry. Because all components of a closed apparatus co-move coherently with the local Ψ-field configuration, the propagation time in both arms of the interferometer remains identical for any subluminal velocity. The null result is therefore not a refutation but a prediction of the theory. The analysis clarifies why relativistic invariance emerges naturally from the dynamical properties of the quarkic ether, making the Michelson–Morley outcome a direct consequence of its axioms.

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1 Why Michelson–Morley Cannot Detect the Ether (and Why That Is a Prediction, Not a Problem)

The Michelson–Morley experiment is historically interpreted as the definitive refutation of any ether model. That conclusion is only valid for **mechanical ethers**: media with shear rigidity, viscosity, or drag. Quarkbase Cosmology does **not** belong to this class. The predictions differ because the axioms differ.

Below is the formal explanation.

2 The Three Conditions Under Which Michelson–Morley Detects a Medium

The experiment can only detect a preferred medium if **at least one** of the following is true:

1. **The medium has drag**
   A body moving through it produces a wake or loses momentum.
2. **The medium has directional response**
   Waves propagate at different speeds depending on motion relative to the medium.
3. **The medium interacts with matter's bulk velocity**
   A closed interferometer changes its optical length when moved relative to the medium.

A positive signal requires at minimum **(2)** or **(3)**.

3 Quarkbase Ether Satisfies None of These Conditions

By axioms explicitly stated in the framework:

- **No friction:**
$$\mu = 0$$
No drag. No wake. No energy transfer from motion.

- **No shear modes:**
Only scalar pressure oscillations exist.
No directional rigidity, no anisotropy under motion.

- **Perfect internal coherence:**
The ether reorganizes around moving quarkbases without leaving detectable imprint at subluminal speeds.

- **Closed apparatus insensitivity:**
Because the optical path depends only on the local luminal mode of the Ψ-field, and that mode is the same in all inertial frames, a rigidly co-moving interferometer cannot detect motion relative to the medium.

Thus, the Quarkbase ether **predicts** the null result.
Not only is the Michelson–Morley outcome compatible with the theory—
it is required by the axioms of the Ψ-field.

4 Why the Null Result Follows Automatically

Let c_Ψ be the luminal mode of the pressure field. For a closed apparatus moving at any subluminal velocity ($v < c_\Psi$):

$$c_{\Psi,\parallel} = c_{\Psi,\perp} = c_\Psi$$

because:

- longitudinal pressure rearrangement follows the same wave equation as transverse propagation,
- motion cannot modify local coherence,
- the ether perfectly reorganizes displaced volume without shear.

Thus, the two arms of the interferometer see **identical** propagation times:

$$t_\parallel(v) = t_\perp(v)$$

and therefore:

$$\Delta t(v) = 0.$$

This matches Michelson–Morley exactly.

The crucial point:
the **null** result is not evidence against a medium—
it is evidence against an **incorrect** kind of medium.

5 Historical Misinterpretation

Einstein's success cemented the belief that:

If an ether exists, an interferometer must detect it.

This is only true for mechanical ethers. Einstein eliminated the ether because the only models considered in 1905 were mechanical. He never considered a frictionless scalar medium with:

- **zero drag**,
- **no shear**,
- **no anisotropy**,
- **luminal coherence**,
- **and no internal dissipative structure**.

The Quarkbase ether satisfies all these properties. It is the **unique** structure that:

- preserves Lorentz invariance,
- reproduces relativity,
- and remains undetectable by Michelson–Morley.

Einstein kept the symmetry, removed the medium, and elevated (c) to a postulate. Quarkbase Cosmology restores the medium, derives (c_Ψ), and keeps the symmetry.

6 A Camera Test: Why No First-Order Experiments Can Detect the Ether

Any apparatus constructed from quarkbases is embedded in and co-moving with the local Ψ-field configuration that defines its dynamics. Thus:

- clocks tick by the internal oscillations of the medium;
- rods are defined by equilibrium compression profiles;
- light is the luminal coherent mode of the same medium.

Consequently:

Every component of the interferometer transforms coherently with the ether.

The apparatus cannot "slip" relative to the medium whose internal geometry defines its length and time standards.

Therefore:

- no fringe shift,
- no anisotropy,
- no aberration,
- no preferred frame detectable.

This is the same structural reason why **Lorentz covariance** emerges.

7 Conclusion

Michelson–Morley does **not** refute the Quarkbase ether.
It **confirms** it.

Because:

1. The ether is frictionless → no drag.
2. The ether supports only scalar pressure waves → no directional anisotropy.
3. All matter is boundary condition of the ether → closed apparatus co-moves.
4. The luminal mode is invariant → identical propagation times.
5. Relativity emerges hydrodynamically → Lorentz invariance is built-in.

Therefore, the Michelson–Morley null result is not a problem.
It is a **prediction** of the theory.

References

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